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RESPONSE UNDER 37 CFR 1.116  
EXPEDITED PROCEDURE  
EXAMINING GROUP 1771

PATENT

Attorney Docket No. 207138  
Client Reference No. 20762

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Nakagawa et al.

Application No. 09/705,838

Filed: November 3, 2000

Art Unit: 1771

Examiner: V. Chang

For: ADHESIVE TAPE AND SUBSTRATE  
FOR ADHESIVE TAPE

PENDING CLAIMS AS OF RESPONSE TO  
OFFICE ACTION DATED NOVEMBER 7, 2002

1. An adhesive tape comprising a substrate and an adhesive layer formed on at least one side of the substrate, wherein the substrate comprises an olefin polymer and a flame retardant, but substantially no halogen atom, and the adhesive tape has a thermal deformation at 100°C of not more than 65%,

wherein the olefin polymer comprises the following Component A and Component B:

Component A: a thermoplastic resin having a carbonyl oxygen atom in the molecular skeleton;

Component B: a propylene/ethylene copolymer obtained by multi-step polymerization involving two or more steps;

wherein the Component B has a dynamic storage modulus (E') at 23°C of not less than 200 MPa and less than 400 MPa, a dynamic storage modulus (E') at 80°C of not less than 40 MPa and less than 180 MPa, and a dynamic storage modulus (E') at 120°C of not less than 12 MPa and less than 70 MPa.

2. The adhesive tape of claim 1, which has an elongation at break of not less than 150% at a tension speed of 300 mm/min.

6. The adhesive tape of claim 3, wherein the Component A is an ethylene copolymer or a metal salt thereof, having a melting point of not more than 120°C, which is obtained by polymerizing a vinyl ester compound, or an  $\alpha$ ,  $\beta$ -unsaturated carboxylic acid or a

derivative thereof, or the vinyl ester compound and the  $\alpha$ ,  $\beta$ -unsaturated carboxylic acid or a derivative thereof.

7. The adhesive tape of claim 3, wherein the Component A and the Component B are mixed at a weight ratio (A:B) of 1:9 - 8:2.

8. The adhesive tape of claim 1, wherein the flame retardant is added in an amount of 20 - 200 parts by weight per 100 parts by weight of the olefin polymer.

9. The adhesive tape of claim 1, wherein the flame retardant is a metal hydroxide.

10. The adhesive tape of claim 1, which has a dynamic storage modulus ( $E'$ ) at 80°C of not less than 25 MPa and a dynamic storage modulus ( $E'$ ) at 120°C of not less than 10 MPa.

11. The adhesive tape of claim 1, wherein the substrate is not crosslinked during or after a forming process thereof.

12. A substrate for an adhesive tape, which comprises an olefin polymer and a flame retardant, but substantially no halogen atom, wherein the olefin polymer comprises the following Component A and Component B:

Component A: a thermoplastic resin having a carbonyl oxygen atom in the molecular skeleton;

Component B: a propylene/ethylene copolymer obtained by multi-step polymerization involving two or more steps;

wherein the Component B has a dynamic storage modulus ( $E'$ ) at 23°C of not less than 200 MPa and less than 400 MPa, a dynamic storage modulus ( $E'$ ) at 80°C of not less than 40 MPa and less than 180 MPa, and a dynamic storage modulus ( $E'$ ) at 120°C of not less than 12 MPa and less than 70 MPa.

15. The substrate of claim 12, wherein the Component A is an ethylene copolymer or a metal salt thereof, having a melting point of not more than 120°C, which is obtained by polymerizing a vinyl ester compound, or an  $\alpha$ ,  $\beta$ -unsaturated carboxylic acid or a derivative thereof, or the vinyl ester compound and the  $\alpha$ ,  $\beta$ -unsaturated carboxylic acid or a derivative thereof.

16. The substrate of claim 12, wherein the Component A and the Component B are mixed at a weight ratio (A:B) of 1:9 - 8:2.
17. The substrate of claim 12, wherein the flame retardant is added in an amount of 20 - 200 parts by weight per 100 parts by weight of the olefin polymer.
18. The substrate of claim 12, wherein the flame retardant is a metal hydroxide.
19. The substrate of claim 12, which has a dynamic storage modulus (E') at 80°C of not less than 25 MPa and a dynamic storage modulus (E') at 120°C of not less than 10 MPa.
20. The substrate of claim 12, which is not crosslinked during or after a forming process thereof.